



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/550,070

09/21/2005

Shigeki Kawarabata

10873.1783USWO

2143

52835

7590

03/10/2010

HAMRE, SCHUMANN, MUELLER & LARSON, P.C.

P.O. BOX 2902

MINNEAPOLIS, MN 55402-0902

EXAMINER

KURTZ, BENJAMIN M

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

03/10/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,070	Applicant(s) KAWARABATA ET AL.	
	Examiner BENJAMIN KURTZ	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-13 are currently pending, claims 14-16 are withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esmond US 3 827 562, Kruse et al. US 4 617 122, Wachter et al. US 3 873 288, Strnad US 4 133 661, White et al. US 5 632 894 and Haworth et al. US 5 651 765.**

Claim 1, Esmond teaches a blood filter device comprising: a housing that comprises a dome portion (62) forming an upper part of the housing, a filter retaining portion forming a middle part of the housing and a bottom portion (61) forming a lower part of the housing, an inlet (63) provided on a portion of the dome portion, a filter (65), the filter being disposed in the filter retaining portion and an outlet (64) provided in the bottom portion, the device being configured so that blood flows into the dome from the inlet, passes through the filter retaining portion and flows out form the outlet, the filter is formed of a sheet like filter member that has been folded so as to have a plurality of

Art Unit: 1797

parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape, the filter is arranged so as to partition a cavity of the housing into a dome portion side and a bottom portion side, with the pleats extending across the filter retaining portion and a bottom space is formed under the filter and above the inner surface of the bottom portion and the outlet is provided in the bottom portion so as to be coupled with the bottom space and includes the center of the bottom portion (fig. 8-10). Esmond does not teach the inlet being provided on a lateral portion of the dome portion, an air vent or a plurality of holding ribs in the embodiment shown in figures 8-10 or the outlet extending in the horizontal direction including the center of the bottom portion.

Esmond, in the embodiment shown in figure 1, teaches a housing comprising a dome portion (23) having an inlet (24) provided on a lateral portion of the dome portion so as to allow blood to flow into the dome portion horizontally and along an inner wall of the dome portion, and an air vent (25) provided at a top of the dome portion (fig. 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dome portion of the embodiment of Esmond shown in figures 1-3 as the dome portion of the embodiment of figures 8-10 because the design ensures the blood flows in a spiral manner so as to effect a uniform distribution and also provides the blood with greater opportunity to release gas bubbles entrapped therein (col. 1, lines 51-60).

Kruse, Wachter and Strnad all teach a housing comprising a filter retaining portion with a filter disposed in the filter retaining portion, and the filter is formed of a

Art Unit: 1797

sheet like filter member that has been folded so as to have a plurality of parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape and a plurality of holding ribs (Kruse, (30, 50); Wachter, (3a, 3b); Strnad, (26)) extending partially and inwardly from a wall of the filter retaining portion without crossing the filter retaining portion are provided at positions corresponding to end portions of the respective pleats, whereby the holding ribs are inserted in the end portions of the pleats respectively (Kruse, fig. 3-5; Wachter, fig. 1-5; Strnad fig. 1-4).

Using a plurality of holding ribs is very well known in the art as shown by Kruse, Wachter and Strnad and would have been obvious to one of ordinary skill in the art at the time of the invention because the ribs provide a seal at the outer ends of the filter material (Kruse, col. 3, line 60 – col. 4, line 4; Wachter, col. 1, line 50 – col. 2, line 40) and the ribs provide a predetermined width space between adjacent interdigitated rib segments (col. 1, line 60 – col. 2, line 13).

White and Haworth each teach a blood filter comprising a bottom portion and an outlet in the bottom portion where the outlet extends in the horizontal direction including the center of the bottom portion (White, fig. 1 and 2; Haworth, fig. 1). The claim would have been obvious because a particular technique, providing a horizontal outlet, was recognized as part of the ordinary capabilities of one skilled in the art, *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007). The recitation of the outlet extending in the horizontal direction is merely a rearrangement of the parts of Esmond. Shifting the

position of an element is unpatentable if shifting the position of the element would not modify the operation of the device, *In re Japikse*, 86 USPQ 70 (1950).

Claim 2, Esmond further teaches a space between an inner side wall of the filter retaining portion and an outer peripheral portion of the filter is filled with a resin so as to be sealed and the filter is fixed to the inner side wall of the filter retaining portion with the resin (fig. 8, 9).

Claims 3-9 recite relative dimensions of the filter apparatus. Esmond does not teach specific dimensions of the apparatus. [W]here the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (1984).

Esmond teaches the general conditions of the claimed apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the dimensions of the filter apparatus to achieve the desired filtering capabilities. [W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation, *In re Aller*, 105 USPQ 233 (1955).

Claims 10, 12 and 13, Esmond further teaches the filter consists of a sheet like mesh material having a function of filtering foreign substances (col. 4, lines 52-66); an outer peripheral length of an internal space of the dome portion is reduced toward the

top of the dome portion (fig. 1) and an inner surface of the bottom portion has no recess or protrusion (fig. 9).

Claim 11, Esmond teaches the device of claim 1 but does not teach, in the embodiment of figures 8 and 9, the filter retaining portion has a cylindrical cavity. Esmond teaches a device where a filter retaining portion has a cylindrical cavity whose cross section taken in a horizontal direction is circular (fig. 1-3). Having a cylindrical housing is a very well known feature in the prior art and is merely a change in shape that would have been obvious to one of ordinary skill in the art at the time of the invention. The configuration of the apparatus is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration is significant, *In re Dailey*, 149 USPQ 47 (1966). Wachter further teaches such a cylindrical cavity as well known in the art.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graus US 6 143 174, Haworth et al. '765, Esmond '562, Kruse '122, Wachter '288, Strnad '661 and White '894.

Claim 1, Graus teaches a blood filter device comprising: a housing that comprises a dome portion (4) forming an upper part of the housing, a filter retaining portion forming a middle part of the housing and a bottom portion (5) forming a lower part of the housing, an inlet (8) provided on a portion of the dome portion, a filter (2), the filter being disposed in the filter retaining portion and an outlet (9) provided in the bottom portion, the device being configured so that blood flows into the dome from the inlet,

passes through the filter retaining portion and flows out form the outlet, the filter is formed of a sheet like filter member that has been folded so as to have a plurality of parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape, the filter is arranged so as to partition a cavity of the housing into a dome portion side and a bottom portion side, with the pleats extending across the filter retaining portion and a plurality of holding ribs (col. 2, lines 39-52, spacers) extending inwardly from a wall of the filter retaining portion are provided at positions corresponding to end portions of the respective pleats, whereby the holding ribs are inserted in the end portions of the pleats respectively a bottom space is formed under the filter and above the inner surface of the bottom portion and the outlet is provided in the bottom portion so as to be coupled with the bottom space and includes the center of the bottom portion (fig. 1, col. 3, lines 18-32). Graus does not teach the inlet being provided on a lateral portion of the dome portion, an air vent, a plurality of holding ribs or the outlet extending in the horizontal direction.

Haworth and Esmond teach a blood filter device comprising a housing with a dome portion forming an upper part of the housing having an inlet (Haworth, 22; Esmond, 24) provided on a lateral portion of the dome portion so as to allow blood to flow into the dome portion horizontally and along an inner wall of the dome portion and an air vent (Haworth, 28; Esmond, 25) at a top of the dome portion (Haworth, fig. 2-5; Esmond, fig. 1-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dome design of Haworth or Esmond with the

device of Graus because the design ensures the blood flows in a spiral manner so as to effect a uniform distribution and also provides the blood with greater opportunity to release gas bubbles entrapped therein (Esmond, col. 1, lines 51-60).

Kruse, Wachter and Strnad all teach a housing comprising a filter retaining portion with a filter disposed in the filter retaining portion, and the filter is formed of a sheet like filter member that has been folded so as to have a plurality of parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape and a plurality of holding ribs (Kruse, (30, 50); Wachter, (3a, 3b); Strnad, (26)) extending partially and inwardly from a wall of the filter retaining portion without crossing the filter retaining portion are provided at positions corresponding to end portions of the respective pleats, whereby the holding ribs are inserted in the end portions of the pleats respectively (Kruse, fig. 3-5; Wachter, fig. 1-5; Strnad fig. 1-4).

Using a plurality of holding ribs is very well known in the art as shown by Kruse, Wachter and Strnad and would have been obvious to one of ordinary skill in the art at the time of the invention because the ribs provide a seal at the outer ends of the filter material (Kruse, col. 3, line 60 – col. 4, line 4; Wachter, col. 1, line 50 – col. 2, line 40) and the ribs provide a predetermined width space between adjacent interdigitated rib segments (col. 1, line 60 – col. 2, line 13).

White and Haworth each teach a blood filter comprising a bottom portion and an outlet in the bottom portion where the outlet extends in the horizontal direction including the center of the bottom portion (White, fig. 1 and 2; Haworth, fig. 1). The claim would

have been obvious because a particular technique was recognized as part of the ordinary capabilities of one skilled in the art, *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007). Graus further teaches the outlet includes the center of the bottom portion. The recitation of the outlet extending in the horizontal direction is merely a rearrangement of the parts of Graus. Shifting the position of an element is unpatentable if shifting the position of the element would not modify the operation of the device, *In re Japikse*, 86 USPQ 70 (1950).

Claim 2, Graus further teaches a space between an inner side wall of the filter retaining portion and an outer peripheral portion of the filter is filled with a resin (14) as to be sealed, and the filter is fixed to the inner side wall of the filter retaining portion with the resin (fig. 1).

Claims 3-9 recite relative dimensions of the filter apparatus. Graus does not teach specific dimensions of the apparatus. [W]here the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (1984).

Graus teaches the general conditions of the claimed apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the dimensions of the filter apparatus to achieve the desired filtering capabilities. [W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to

discover the optimum or workable ranges by routine experimentation, In re Aller, 105 USPQ 233 (1955).

Claims 10, 11 and 13, Graus further teaches the filter consists of a sheet like material having a function of filtering a foreign substance (col. 2, lines 39-52); the filter retaining portion has a cylindrical cavity whose cross section taken in a horizontal direction is circular (col. 1, lines 41-55); and an inner surface of the bottom portion has no recess or protrusion (fig. 1).

Claim 12, Haworth and Esmond further teach an outer peripheral length of an internal space of the dome portion is reduced toward the top of the dome portion (Haworth, fig. 2-5; Esmond, fig. 1-3).

Response to Arguments

3. Applicant's arguments filed 2/16/10 have been fully considered but they are not persuasive.

Applicant argues that White teaches a bottom of the filter element is covered with a base wall and therefore a space under the filter element is not coupled with the exit conduit. Both Esmond and Graus teach a space under the filter element that is coupled with the exit conduit. White is only relied on to show that having a horizontally extending exit conduit is known in the art and would have been an obvious design choice.

Applicant argues that Haworth does not teach the outlet extending in a horizontal direction. Haworth teaches this feature as clearly seen in figure 1. Similar to White,

Art Unit: 1797

Haworth is not relied on to show a space under the filter is coupled with the exit conduit as this is already shown in both Esmond and Graus. Haworth is relied upon to teach that a horizontally extending conduit is known in the art and would have been an obvious design choice.

Applicant states that none of the cited prior art contemplates the use of a bottom space. Both Esmond and Graus teach a space under the filter as claimed as detailed in the rejection above.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN KURTZ whose telephone number is (571)272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin Kurtz
Examiner
Art Unit 1797

/Benjamin Kurtz/
Examiner, Art Unit 1797